Neville, P., Zahra, J., Pilch, K., Jayawardena, D., & Waylen, A. (2019). The behavioural and social sciences as hidden curriculum in UK dental education: A qualitative study. *European Journal of Dental Education*, *23*(4), 461-470. https://doi.org/10.1111/eje.12454

Introduction

Many dental undergraduates struggle to see the relevance of behavioural and social sciences (BeSS) in their studies, preferring technical training and practical application rather than social science content.[1 2] Together with the biomedical model of healthcare that prevails in dental curricula[3] the result is a clinical model that considers oral health as pathological, reducing dentistry to instrumental tasks and procedures ('drill and fill'). This model risks ignoring the role of personal, social, cultural and economic context on the health of individuals at a time when ageing populations are more likely to present with increasing and competing health care needs. [4 5 6] If dental undergraduates do not consider their professional requirements as 'integrated' and 'holistic', requiring technical, social and behavioural knowledge in equal measure[7, p.281-2] they may negatively impact on their 'professional life after graduation'[7, p.281] by lacking necessary intra-personal(reflective and self-awareness), and inter-personal (communication and teamwork) skills.

In the United Kingdom (UK) dental curricula blueprint key educational objectives critical to the development of safe, clinically effective and patient-centred dental professionals.[7,8] Most assume that dental curricula specify the stated learning outcomes and course content of dental programmes but a curriculum comprises three parts: a formal curriculum, informal curriculum and hidden curriculum.[9] The formal curriculum outlines *what is planned* to be taught (and how), the informal curriculum refers to *what is actually* taught (including unscripted teaching) and the hidden curriculum(HC) refers to '*what is being experienced*' by the students (including information implicitly conveyed by teachers and peers and the values and moral judgements of the profession). [9 10] These three parts are interconnected and contribute to the education and professional socialization of dental students.[9]

The relevance of BeSS in UK dental education was first mooted in 1990[11] and the General Dental Council's(GDC) current Preparing for Practice document[12] requires that knowledge and application of BeSS as applied to dentistry underpins the four key domains - communication, clinical, professionalism and management and leadership. BeSS approaches are relevant to distinct learning outcomes such as understanding models of health and illness, patient care and management, communication, reflection and teamwork (see Table 1). This reflects the fact that most registered dentists in the UK work as associates in general dental practices, the majority of which has some sort of National Health Service(public) contract.[13 14] Nevertheless, as commented above, research indicates a contradiction with how UK students conceptualise dentistry, with students preferring a biomedical rather than a biopsychosocial approach.[15] When a formal curriculum is not supported by the attitudes and values conveyed by students the existence of a hidden curriculum(HC) is inferred.[16] In this case, the HC points to the existence of a core tension between how dental students and the GDC perceive the role of dentistry.

HC is defined as 'the set of implicit messages about values, morals and attitudes that learners infer from the behaviour of individual role models as well as from group dynamics, processes, rituals and structures.[16, p.36] The aim of the hidden curriculum is to 'provide students with cues about how to cope and thrive within a particular community of practitioners, staff and other students'.[10, p.344] In this regard, it can comprise of 'the customs, rituals and others aspects of working life that experienced doctors [dentists] take for granted'.[17] These include: administrative skills, timekeeping, dealing with a difficult patient, addressing a mistake, managing a patient complaint, forging constructive teamworking with colleagues and supervisors.[17] These work-specific customs and values are shaped by the role modelling effect that students are exposed to from faculty and staff, as well as by the 'educational structures, practices, and culture of an educational institution' .[18, p.131] While the hidden curriculum is expressed through and legitimated by school culture,[9] students may

be unaware that they have internalised this institutionally-sponsored world view and are perpetuating it through their own expectations and actions.[10,19 20]

Traditionally, the HC has been conceptualised as a negative concept.[16 21] The largely unwritten and unregulated ways in which the culture (symbols, meaning, values) of a profession/learning community is communicated and transmitted to novice students can provide students with unsafe 'shortcuts' on how to understand and 'do' their profession.[17] More recently, researchers have re-framed HC as a reminder of the complexity of the clinical and professional environment and how this context shapes student's perception of their profession,[18] constructions of well-being and job satisfaction[18] as well as on how students learn to be professional.[10,19,20]

The hidden curriculum infiltrates all aspects of student learning and professional development.[10, 20] In particular the HC can expose some ethical, moral and value-based flashpoints along their professional development.[21] In medical education, the HC is associated with the development of ethical thinking,[20] the rise and fall of student empathy [20] and idealism [20 22] . In nursing and pharmacy, the hidden curriculum provides students with practical understandings of how to manage work-based stress and workload. [23 24] While there is less research on the hidden curriculum in dentistry[7] these studies have found that dental students can become more cynical,[25] less vocationally orientated [26] and more externally motivated[27] as they as they progress into the clinical aspect of their studies. Exposing such a HC in dental education is important because it offers us an alternative approach to dealing with the issue of staff burnout [21 28] as well as making patient interactions more meaningful.[29]

This study's aim is to expand on the existing knowledge base of HC in dentistry and explore the mechanisms and dynamics through which the negative perception of BeSS develops among dental undergraduate students and whether increased exposure to clinical environment shapes this outcome. It will be contended that addressing the HC around BeSS in dental education will go some way to challenge pre-conceptions that dentistry is only a biomedical profession. The research will help raise awareness of the challenges and obstacles that faculty face when teaching a biopsychosocial approach to dentistry. By endorsing the clinical, social and behavioural aspects of dentistry will we ensure that dental students develop into holistic, patient-centred practitioners, equipped with effective and sympathetic patient management skills.[30 31]

[INSERT TABLE 1 HERE]

Materials and method

This project was conducted in 2016-17 with funding from a University Teaching Development Grant (UDTG). The aim of the UTDG scheme was 'to raise the profile of teaching and learning by supporting individuals in undertaking research projects / initiatives aligned with the University's educational imperatives that, on completion, will enhance the student learning experience' at the University in question.

<u>Context</u>

In this Dental School the BeSS are taught in the Dentist in Society (DiS) unit that sits across Years 1 to 5 within the Personal and Professional Development (PPD) theme. The DiS content draws from sociology, psychology, professionalism, dental public health, ethics and law and communication skills. DiS is taught by a small teaching team, comprising a sociologist, a psychologist and a dental public health consultant; the ethics and law content is supplemented by guest lectures from professional bodies and independent speakers. All content is aligned with the GDC's Preparing for

Practice learning outcomes and is taught in various ways - lectures, small group tutorial teaching, online lectures, /communication role play. Currently, DiS is summatively assessed by a scheduled course-work assignment (case study/patient scenario with short answer questions) with formative assessment provided through in-class participation, self-assessment quizzes and peer, patient and staff feedback. At the time of this study, students were assessed through an end of unit summative, closed book exam.

Methodology

Studies on HC rely on qualitative research methods.[32 33] As a result, qualitative research methods and principles were used to collect student data. Two students were recruited as co-researchers (KP and DJ) with an active research role, collaborating with academic researchers but also retaining a degree of independence.[34] The student-as-co-researcher (SCR) roles were critical in developing an appropriate, student-facing research project. We relied on their 'expert' knowledge as dental students studying BeSS to improve the quality and relevance of the research, ensure appropriate and acceptable research design and reliable and credible outcomes.[34] All authors (faculty and students) worked together to develop the topic guide and undertake data analysis.

Most HC studies indicate that students' perceptions and attitudes change throughout the course of their studies, especially when they enter the clinical years of their studies. In this dental school, the first two years are deemed to be pre-clinical years, with the remaining three years being clinical in focus. We were interested in examining 1) if their attitudes towards BeSS demonstrated a change over the course of their studies; and 2) what impact, if any, increased exposure to the clinical environment and supervisor as role models may have on student's perception of BeSS and dentistry more generally. As a result, focus groups were undertaken with students from each year cohort in February - March 2017. They were facilitated by an experienced qualitative researcher (JZ, unknown to the student body) with KP and DJ as notetakers.

At the beginning of the focus group, all participants were reminded that the questions were only in relation to their evaluation of their DiS units and not the PPD theme overall. The focus group schedule comprised the following questions:

- What does DiS mean to you?
- Why do you have to study DiS in dental school?
- In what ways do you think the topics covered in DiS prepare you for your role as a dentist?
- Has DiS prepared you in any way to deal with patients?
- What is your overall view of DiS teaching?
- Do you think the assessments are fair/appropriate?
- What room for improvement?

All questions were asked in each focus group and each group typically lasted for around 50 minutes.

Ethical approval

Ethical approval was given by the Faculty of Health, Ethics Committee on 27 January 2017 (Study number 45361).

Participants

All dental undergraduates from Years 1-5 were invited (via their university email address) to participate in this study. The invitation described the study's aims and objectives and included the participant information sheet. The SCRs also raised awareness about the study among the student

body through word-of-mouth. Of the 350 registered dental students who were eligible to participate in the study, only 37 replied to the invitation. This represents a response rate of 10.6%. Each participant gave informed consent at the start of the focus group. Table 2 contains the demographic breakdown of the focus group participants. [INSERT TABLE 2 HERE]

Initially five focus groups were scheduled, one for each year group. The focus groups of the clinical years (Years 3-5) were conducted first, beginning with the focus group for year 4 and 5 students. These were followed a week later by the Year 3 focus group. The main purpose of staggering the clinical focus groups in this way was to establish a preliminary set of codes and to test or corroborate these with the data collected from the Year 3 focus group. As no new codes emerged from the Year 3 focus group data saturation was deemed to have been met in relation to the clinical aspect of the course.[35] As a result, no further clinical focus groups were arranged. Two focus groups with Year 1 and Year 2 students respectively were also organised to establish an orientating set of codes for the pre-clinical cohorts. An additional focus group for both Year 1 and Year 2 students was convened a week later, to test or corroborate the preliminary pre-clinical codes with the data collected at which point data saturation for the pre-clinical cohort was reached.[35]

Data analysis

Fieldnotes recorded by the SCRs and the focus group facilitator were collected and reviewed after each focus group to allow for the refinement of the topic guide where needed. All focus groups were audio-recorded: five were sent to a transcription service for verbatim transcription and one transcribed by KP and DJ for experience after the focus groups were held.

As most research on HC is qualitative in nature, the focus group data was analysed in accordance with qualitative research principles. An inductive, thematic analysis approach[36] was used to analyse the data to complement the study's exploratory focus. All transcripts were circulated to the research team and all read / independently coded the transcripts. Codes were not predefined by existing theory but rather grouped into emerging categories. A consensus meeting was held to produce a working analytical framework initially based on Year 1 and Year 3 transcripts and then these categories and codes were applied to the remaining transcripts. Codes were entered in a framework matrix and summarised with references to quotations by PN (see Table 3). [INSERT TABLE 3 HERE]

Results

Thirty-seven students (10.6% of total student body) attended a focus group for their specific year.

Student attitudes towards and perceptions of BeSS (Table 3, a)

Students consistently identified BeSS as abstract and academic. Some recognised that these disciplines could positively impact their professional development, especially in relation to shaping their ethical treatment of patients and identity as healthcare professionals (Table 1, quote 1) but others questioned or denied its dental relevance and legitimacy. This questioning of the role and place of BeSS within dentistry evolved over time: first- and second-year students expressed interest and were openly disposed to the topic but this amenability declined from Year 3 onwards. (Table 3, quote 1)

Teaching culture (Table 3, b)

Student perceptions of the expertise and teaching skills of BeSS staff also fluctuated across year groups. Year 1 and 2 students were more receptive to BeSS staff then students in later years. They felt staff were helpful and appreciated their disciplinary expertise. However, again as clinical studies

began, there was an apparent decrease in esteem for and appreciation of BeSS staff expertise. This sentiment was expressed by reiterating a preference for being taught by dentists, even in non-clinical topics.

Learning culture (Table 3, c)

BeSS knowledge helped some students gain a new perspective on their role and responsibilities as aspiring healthcare professionals, but others believed that content was not pitched at the right level. Some felt that BeSS was neither relevant to dentistry nor modified for the learning needs of the audience. This perceived mismatch created a sense of unease for students, giving them the perception that they were being measured against an impossibly high standard of knowledge.

Curriculum factors (see Table 3, d)

Some students complemented the breadth that BeSS brings to the undergraduate curriculum, broadening their knowledge and skills base accordingly. While they acknowledged the obligation to include BeSS in undergraduate curricula, students reported that the curriculum was disorganised, over-populated and lacking cohesion. They offered opinions about how it should be changed to focus on Finals examinations and their perceived careers, rather than adhering to the GDC remit.

Assessment (see Table 3, d)

Students from Year 3 onwards expressed difficulty with the PPD summative exam. The narrow scope of questions was criticised, revealing struggles with learning the content. This sense of frustration was increased when students discussed the marking process. Most reported that marking was arbitrary, subjective and negatively applied by BeSS staff. Students were critical of the “low marks” acquired in this exam compared to their other assessments. This discrepancy was attributed to the problematic nature of the exam and its BeSS content. Fear of failure was palpable among students, with some interpreting it as a personal attack on their credibility as learners. Students also shared views on alternative and more acceptable forms of assessment, such as oral presentations.

Student culture (see Table 3, f)

All focus group participants openly discussed the negative “word of mouth” generated by dental students when discussing BeSS, especially younger students receiving information from elder students. The existence of such sentiments and consequent urban myths unsurprisingly has an adverse impact on student engagement with BeSS. One area where this was particularly noticeable was in relation to assessment. The myth that BeSS staff purposely manipulate marking schemes to ensure a high fail rate exemplifies the extent of distrust felt by students towards BeSS.

Discussion

This qualitative research is, to our knowledge, the first in nearly twenty years to explore UK dental students’ perceptions of BeSS in the dental curriculum. The study revealed a student cohort who – over time- developed a strained relationship with BeSS, with a minority of students believing that BeSS offered no added value to their professional development. This negative perception coincided with a disregard for the expertise and skills of BeSS staff. The decline in student appreciation of BeSS became apparent from Year 3 onwards, when students moved to the clinical phase of their studies. It was perpetuated and legitimated by the existence of a strong student culture that openly critiqued BeSS among and between student year groups. Overall, students expressed the viewpoint that dentistry was a clinical pursuit, where personal and professional competencies were best taught by and modelled by dentists and not non-clinical staff.

The study reveals the existence of a HC in UK dental education about UK students' perceptions of the role and purpose of dentistry. While other research on HC in dental education indicates the ethical and value-based challenges students face when developing their professional identity; this study adds to this literature by offering 'a reflection of the professional microculture' [16, p.36] that dental students are exposed to(implicitly and explicitly) while at dental school. As students move into the clinical phase of their studies, their interactions with clinical dentistry, supervisors, and patients increase in frequency. These clinical interactions are valued by the students and take priority when developing their professional identity. Our study revealed that, before this, students were relatively content to learn about oral health and patient care from a social science/ academic perspective. However, when faced with the prospect of 'doing' dentistry, the values, attitudes, practice and knowledge of clinicians took precedence over those of non-clinical staff members. Undoubtedly, the experiential model of practical skills development that traditionally defines dental education- 'see, do and repeat' method of instruction- places the instructor/clinical supervisor at the centre of the learning, as the source of expert knowledge and assessor of students' skill development. As a result, we can acknowledge how influential clinicians can be in role-modelling the student's perception of the role of dentistry as a clinical pursuit. This, combined with their actual interactions with and treatment of patients, makes them eager recipients of the implicit and explicit cues they observe from faulty and other healthcare workers in the dental clinical environment. Though these mechanisms, dental students learn that the BeSS has less of an influence on their attitude towards dentistry over time.

Such a finding supports similar studies in medical and nursing schools, where other healthcare students also query the relevance of the BeSS to their practice. [3, 30, 37-40] Much of the earlier work on a hidden curriculum about BeSS in UK dental education was quantitative in focus,[1 2] relying on questionnaire data. Our study, on the other hand, offers rich narrative data that adds to the existing literature on HC's in dental education more generally. One of the outcomes from the qualitative findings has been its challenging of the presumption that dental students are passive recipients of HC. On the contrary, we found evidence that dental students are active propagators of the HC about BeSS, creating a range of student stories or vignettes that strike fear into the heart of every dental students – the fear of failure, the fear of unhelpful staff and the fear of low grades. Such horror stories are widely shared among and across year groups with the result that Year 1 students were already 'warned' about BeSS within a few months of beginning their studies. A combination of fear and mis-information fuels these stories making them hard to refute or challenge. These student generated story-telling strategy is another effective mechanism through which the HC about BeSS is achieved.

It is important to note that evidence of a hidden curriculum about BeSS does not indicate a mass rejection of BeSS, or a biopsychosocial aspects of dentistry. Aligning with previous research, students were keen to highlight how patient-facing aspects of the curriculum, such as communication skills, patient management skills and the psychology of anxiety were beneficial.[41-44] Nevertheless, they struggled to see the relevance of other content, despite all teaching being explicitly related to GDC learning outcome(s) and being introduced with a discussion of "why dentists need to know this". The perceived lack of BeSS relevance casts doubt over the utility of given topics, as well as summative assessments and staff credibility.

Our findings highlighted that urgent action was required to tackle student perceptions of the unfairness of BeSS assessments. Fairness is a key principle of assessment and takes on multiple characteristics - being uniformly administered, that students are aware of how their work will be evaluated and are provided with opportunities 'to get good at what it is that the standards

require'.[45 p.12] The DiS exam satisfied none of these criteria as far as students were concerned. Cognisant of the negative impact on student learning we changed the assessment format for the academic year 2017/8 to open-book course work based on a dentally relevant patient scenario with clearly established marking criteria. Students now complete the assignment within a four-week period and can voluntarily attend a scheduled "revision" lecture to clarify any aspect of the assignment with DiS teaching staff. Since this change – perhaps unsurprisingly - student attitudes towards the assessment have improved along with grades.

Although our findings identify negative perceptions of BeSS and the existence of urban myths, it is useful to elicit student perspectives of their curriculum because of the impact on student course and career expectations.[46] The profile of oral health in the UK has changed dramatically over the past 40 years[47] and continues to do so: the population is ageing but the prevalence of edentulousness is decreasing. In a society of declining dental need, 21st century dental education needs to be increasingly concerned with health promotion and disease prevention rather than restoration alone.[47] An understanding of the influence of personal, social, political, economic and environmental factors on health provides an important knowledge base for oral health promotion and the development of patient-centred care.[48] If students fail to perceive the relevance and legitimacy of BeSS within their education, they may be unprepared for the day-to-day realities of delivering oral health in their communities.

In order to challenge the credibility gap for BeSS among UK dental students this hidden curriculum needs to be confronted and exposed, a controversial act for any organisation.[9] Nonetheless, such a process of critical reflection is necessary to ensure that dental undergraduates are prepared to deliver effective oral health in the 21st century.

Three strategies are identified to achieve this outcome. First, dental schools and faculty need to reflect on whether, and how they perpetuate and legitimate explicit and implicit biases against BeSS in dental education. Albert, Paradis and Kuper[49] found that social scientist faculty in medical schools struggle for professional acceptance and are challenged on the legitimacy of their non-biomedical/interpretivist perspective by colleagues and faculty members. Clinicians in dental schools should be aware of and explicitly acknowledge the complementary nature of the BeSS curriculum to clinical teaching and model this in interaction with fellow staff and students. This is especially important given that clinical staff are necessarily the natural role models for dental students. It is also important to consider the amount of time allocated to BeSS teaching, the number of BeSS staff and the facilitation of opportunities to cross-collaborate, share knowledge and co-teach. Such self-reflection will catalyse a bottom-up change in attitude towards BeSS where necessary.

Second, curricular change in dental schools is needed to ensure complete integration of BeSS rather than it being merely an 'add-on' to dental school teaching.[7, 50] An integrated curriculum 'includes and equally values the natural or biomedical sciences as well as the humanities, arts and social sciences, respecting that all of this knowledge has value for the practice of healthcare'.[51 p.221] Such a move would help breakdown the knowledge hierarchy that traditionally defines healthcare education: one in which biomedical knowledge is falsely prioritised at the expense of BeSS. A truly integrated curriculum, co-designed and co-taught by clinicians and BeSS staff, promotes the viewpoint that both clinical and BeSS knowledge, skills and expertise complement healthcare practice. Harmonising clinical and interpretative epistemologies in this way will address student criticisms that current BeSS teaching lacks cohesion and relevance and encourage a more appropriate professional image of dentists as 'biopsychosocial clinicians'[15] rather than 'drill and fill' technicians.[51]

Finally, at an upstream level, the benefits that BeSS bring to the professional and clinical competencies in dentistry need to be more widely acknowledged by the GDC and other Dental Professional bodies. Recently, there has been a sectoral recognition of the value of BeSS in medical curricula internationally [52-54] and similar recognition has been achieved in US dental education[6] ; however, no similar shift has been recorded in UK dentistry. Clearly, such a move would improve the legitimacy of BeSS in dentistry[9] and challenge the perception of BeSS as the 'poor relations'[55] in professional dental education.

Strengths

Our study design enabled us to collect data from all five years of the student cohort and identify a temporal change in student attitudes. Our focus groups represented male and female students equally which is important: stereotypically, female students are more likely to have an affinity for BeSS than male students. By using two undergraduates as co-researchers on this project and an independent focus group facilitator we were able to let the 'student voice' emerge unhindered (as evidenced by the critical nature of many comments). The topic guide ensured that we gathered a broad range of student perceptions about BeSS education within a dental context.

Limitations

Qualitative research methods offer more in-depth student data than a traditional quantitative study design. However, we acknowledge that our findings are not generalisable to the wider population and so we cannot claim that this account of dental student perceptions and attitudes is representative of all UK dental undergraduates: our research is specific to the experiences of a student cohort at one UK dental school and the specific BeSS curriculum therein.

Group effects may also have affected our findings[56]: as a self-selecting sample, participant views expressed here may not represent all students in our school. Indeed, some participants may have viewed the focus groups as an opportunity to vent their personal frustrations with BeSS thus introducing selection bias into the focus group findings. This sense of grievance may also have skewed the focus group dynamic whereby other participants felt uncomfortable presenting an alternative viewpoint. However, a qualitative researcher experienced in facilitating focus groups (JZ) was employed to moderate the focus groups and attempt to mitigate against such a risk.

Furthermore, the presence of students as SCR may also have altered the dynamic in the focus group. Despite their role as non-participatory note-takers, their present could have alarmed some of their fellow students and raise doubt in their minds about whether their comments could be really treated confidentially. However, the fact that critical opinions emerged from the focus groups means that the focus group participants felt comfortable enough to speak frankly in front of their classmates.

Conclusions

Despite an international recognition of the value of BeSS in healthcare education, our findings show that some UK dental students openly question the relevance of their inclusion in their curriculum and critique the legitimacy of its epistemology and the staff delivering BeSS teaching. Such findings point towards a hidden curriculum in relation to BeSS within dental education. By being unaware of, or underestimating the utility of BeSS, students may fail to recognise the biopsychosocial dimensions of oral health and dental practice. We ask that all UK dental schools review their relationship with BeSS to assess whether or not they are perpetuating a hidden curriculum about BeSS in their school activities.

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